Cell Size and Mitosis Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Class Period\_\_\_\_\_Date\_\_\_\_\_\_\_\_\_\_\_

**Read about cell size limitations on pages 201-203 and answer the following questions using complete sentences that restate the question in the answer.**

1. Describe the function of the plasma membrane.

2. How does cell size affect the rate of diffusion?

3. How does protein production limit the size of cells?

4. How does surface area-to-volume ratio limit the size of cells?

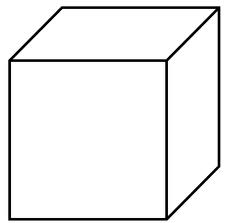
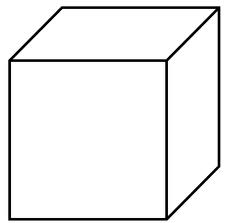
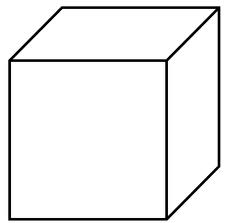
5. Explain what would happen if a cell just doubled in size?

6. What is the method cells use to maintain optimum size?

7. Calculate (1) the surface area, (2) the volume, and (3) the surface area to volume ratio of the following three cubes. (Show your work!)

**Surface Area (SA) = length x height x number of sides (How many sides on a cube? \_\_\_\_)**

**Volume (V) = length x height x width**

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 2 3 4

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V=\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ V=\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ V=\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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8. What happens to the surface area to volume ratio as the cube gets larger?

**Read about cell reproduction on pages 203-210 and answer the following questions using complete sentences that restate the question in the answer.**

9. What are chromosomes and why are they important?

10. How are chromosomes and chromatin different?

11. The cell cycle is the sequence of growth (interphase) and division of a cell (mitosis). It ends with the process of cytokinesis. Diagram and label the stages of the cell cycle in the cells below. Describe each stage next to your diagram.

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12. What is the result of mitosis?

13. List the levels of organization beginning with the cell.